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DEPARTMENT OF STATE

22 CFR Part 121

[Public Notice: 9605]

RIN: 1400-AD32

Amendment to the International Traffic in Arms Regulations: Revision of U.S. Munitions List Category XII

AGENCY: Department of State.

ACTION: Final rule.

SUMMARY: As part of the President's Export Control Reform effort, the Department of State amends the International Traffic in Arms Regulations (ITAR) by revising Category XII (fire control, laser, imaging, and guidance equipment) of the U.S. Munitions List (USML) to remove certain items from control on the USML and to describe more precisely the articles continuing to warrant control on the USML. The Department also amends USML Categories VIII, XIII, and XV to reflect that items previously described in those Categories are now controlled under the revised Category XII or Commerce Control List. Further, the Department revises USML Category XI to move items to the CCL as a result of changes to related control in USML Category XII.

DATES: This rule is effective on December 31, 2016.

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SUPPLEMENTARY INFORMATION: The Directorate of Defense Trade Controls (DDTC), U.S. Department of State, administers the International Traffic in Arms Regulations (ITAR) (22 CFR parts 120-130). The items subject to the jurisdiction of the ITAR, *i.e.*, defense articles, are identified on the ITAR's U.S. Munitions List (USML) (22 CFR 121.1). With few exceptions, items not subject to the export control jurisdiction of the ITAR are subject to the jurisdiction of the Export Administration Regulations (EAR), 15 CFR parts 730-774, which includes the Commerce Control List (CCL) in Supplement No. 1 to Part 774, administered by the Bureau of Industry and Security (BIS), U.S. Department of Commerce. Both the ITAR and the EAR impose license requirements on exports and reexports. Items not subject to the ITAR or to the exclusive licensing jurisdiction of any other set of regulations are subject to the EAR. The revisions contained in this rule are part of the Department of State's retrospective plan under E.O. 13563.

All references to the USML in this rule are to the list of defense articles that are controlled for the purpose of export or temporary import pursuant to the ITAR, and not to the defense articles on the USML that are controlled by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) for the purpose of permanent import under its regulations (see 27 CFR Part 447). Pursuant to §38(a)(1) of the Arms Export Control Act (AECA), all defense articles controlled for export or temporary import are part of the USML under the AECA. For the sake of clarity, the list of defense articles controlled by ATF for the purpose of permanent import is the United States Munitions Import List (USMIL). The transfer of defense articles from the ITAR's USML to the EAR's CCL for the purpose of export control does not affect the list of defense articles controlled on the USMIL under the AECA for the purpose of permanent import.

Revision of Category XII

The revision of USML Category XII (RIN 1400-AD32) was first published as a proposed rule on May 5, 2015, for public comment (*see* 80 FR 25821) (1st proposed rule). The comment period ended July 6, 2015. One hundred twenty parties submitted public comments, which were reviewed and considered by the Department and other agencies.

A second proposed rule was published on February 19, 2016 for public comment (*see* 81 FR 8438) (2nd proposed rule). The comment period ended on April 4, 2016. Thirty-eight parties submitted public comments, which were reviewed and considered by the Department and other agencies. The discussion below, regarding items added or modified to Category XII, refers to text proposed in one or both of the two proposed rules, unless otherwise stated.

The majority of the public comments stated that the proposed controls in USML Category XII drew a clear line between the USML and CCL for items that are exclusively military vice those that have commercial and civil applications. Individual commenters addressed specific issues with some of the proposed provisions, which are described below.

General Comments

One commenter requested a 365-day delayed effective date before this final rule goes into effect. The Department does not accept this comment. The rule will be effective on December 31, 2016.

One commenter stated that small businesses face a substantial cost disadvantage when having to deal with export compliance regulations and fees when compared to their larger counterparts, who often have in-house legal counsel and other resources that would be prohibitively expensive for

small and mid-size businesses. The commenter requested that the Department enhance export assistance resources, particularly for small businesses. The Department accepts this comment. As part of ECR, the Department and our interagency partners have increased our industry outreach, and particularly our outreach to small and mid-size businesses.

One commenter raised questions regarding the use of the term “specially designed” which is set forth in the ITAR at §120.41. The commenter stated that, as exporters are explicitly authorized to self-determine the jurisdiction of their item, including for those controls that use “specially designed” as a control parameter, there may be situations where the U.S. government does not agree with the self-determination. The commenter stated that a number of Department of Commerce license applications have been returned without action due to the U.S. government’s uncertainty about the jurisdiction of the item. As the commenter further notes, in such instances, the Department’s position is that a Commodity Jurisdiction (CJ) determination is the only official method for determining an item’s jurisdiction. The commenter stated that this process is contrary to ECR. The Department does not accept this comment. While exporters are obligated to determine jurisdiction, they must do so correctly. In instances where an exporter submits an application to the Department of Commerce

that is incorrect, or potentially incorrect, it is the U.S. government's responsibility to question that self-determination, and the only method for officially resolving questions of jurisdiction is a CJ determination.

The commenter also stated their concern that items may still be within the scope of Category XII, even though the items are not described in the control paragraphs. The commenter posited that there is a policy that the revised Category XII is intended to retain most items on the USML and that, therefore, how an item was controlled under the prior Category XII may still be relevant as to whether that item is controlled in Category XII today. The Department does not accept this comment. While it is true that the transfer to the CCL of lower level military parts and components was greater in other USML categories than in Category XII, it is because the parts and components that will remain in Category XII continue to warrant ITAR control. Through ECR, Category XII, and other USML categories, have been revised to be a positive list of defense articles. If an item is not within the scope of one or more of the control paragraphs, that item is not a defense article and is not ITAR controlled. For additional information, see the Department's Transition Plan, which addresses prior CJ determinations (78 FR 22740, 22747-22751).

One commenter requested that the Department remove the phrases “specially designed for articles in this subchapter” and “specially designed for articles in this category” and replace them with “specially designed for a military end user,” throughout Category XII. The commenter stated that they read the two phrases as overly broad and confusing when applied to academic instrumentation, and were concerned that they will "catch" many items designed for civilian use. They also stated concern that there is no contingency to “release” items as currently written. The Department does not accept this comment. The Category describes the items that warrant control on the USML.

Specially Designed for a Military End User

The revised USML Category XII introduces a new concept that has not been used in the other revised USML categories, explicitly controlling certain articles based on the original intended end user. In paragraphs (b)(6), (c)(1)(iii), (c)(3), (c)(4)(ii), (c)(5), (c)(6)(viii)(b), and (c)(7)(ii), items are identified as defense articles if they are specially designed for a military end user. The definition of military end user in the new Note to Category XII is borrowed from the EAR (*see* 15 CFR 744.21(g)), as further harmonization under ECR. A military end user is defined as the national armed services, national guard, national police, government intelligence or reconnaissance

organizations, or any person or entity whose actions or functions are intended to support military end uses. An item is specially designed for a military end user if it was developed for use by a military end user or users. If an item is developed for both military and non-military end users, or if the item was created for no specific end user, then it is not specially designed for a military end user. Contemporaneous documents are required to support the design intent; otherwise, use by a military end user establishes that the item is specially designed for a military end user.

If exporters are unable to determine the proper jurisdiction of an item, the Department has the CJ process available to provide definitive guidance. A request for a CJ determination under the control text below may be submitted up to 60 days prior to the effective date of this rulemaking.

Many commenters submitted public comments identifying concerns with this control structure. The Department and its interagency partners reviewed these comments and largely agree with the commenters that control based on original design intent is more difficult to implement than a control based on technical parameters. However, the Department initially proposed technical parameter based controls in the 1st proposed rule, and the public comments asserted, to the Department's satisfaction, that commercial and civil variants exist that meet those technical parameters. Therefore, the

Department developed and published the “specially designed for a military end user” in response to these public comments. The Department cannot yet articulate objective technical criteria that would establish a bright line between military and commercial and civil systems. The public comments to the 1st and 2nd proposed rules also did not identify any such objective criteria for these seven paragraphs. The Department will publish a notice of inquiry (NOI) later this year soliciting public input on suggested control parameters for these seven paragraphs.

One commenter asked whether this control will limit defense articles no longer in development to USML Category XII. The Department acknowledges that once an item is out of development, it is not possible to change the original intended end user of the item. It is for that reason that the Department will consider CJ applications based on information other than documents contemporaneous with the development of the item.

One commenter stated that, while the definition of “military end user” is borrowed from the EAR, the purpose of the definition under the EAR is the imposition of a license requirement; it is not appropriate for the ITAR, where the purpose is to determine jurisdiction. Specifically, the commenter noted that the definition would result in commercial infrared cameras being subject to the ITAR. The Department does not accept this comment. While

the definition does serve a different purpose under the ITAR than the EAR, it is an established definition. Additionally, the Department notes that the controls on infrared cameras in XII(e)(4) do not use the control parameters “specially designed for a military end user,” but rather use the control parameters “specially designed for an article in the subchapter.” While both controls use the term “specially designed,” defined in §120.41, they are very different in application. For example, an infrared camera would not be “specially designed for an article in the subchapter” if it is used in or with a system subject to the EAR that is in production, under paragraph (b)(3) of §120.41.

Several commenters stated that it may be difficult for purchasers and subsequent users to know the jurisdictional status of items because they may not be privy to the design intent of the original manufacturer or know all other uses of an item. The Department acknowledges that cooperation with the manufacturer in such cases to identify the proper jurisdiction of USML defense articles is critical for a successful compliance program. Moreover, this provision does not add new obligations on parties because most provisions of the USML in place prior to the reform effort required an investigation into the design intent behind a product's development. The

revised USML has substantially reduced the need to conduct such investigations, but has not yet eliminated it.

One commenter requested that the Department revise the note so that, in the absence of contemporaneous documentation, use by a military end user does not establish that an item is specially designed for a military end user, and instead make the note say that use by a commercial/civil end user establishes that an item is not specially designed for a military end user. The Department does not accept this comment. The items controlled under the seven paragraphs that use “specially designed for a military end user” are items that warrant ITAR control, even if these items have been used by a commercial/civil end user. However, if such items have transitioned to normal commercial use, the Department would review an application for a CJ requesting the Department to establish that the item is not subject to the ITAR.

One commenter noted that designing an item to a military specification for a military end user will make that item specially designed for a military end user. The Department confirms this comment. However, if the item was originally designed for both military and non-military end users, then the fact that a military specification was included as a design requirement does not render the systems ITAR controlled.

The commenter also noted that making other modifications to a commercially available item for a military end user will make that item specially designed for a military end user. The Department confirms this comment as well because the version modified for a military end user is a different item than the one originally developed for a non-military end user.

Several commenters noted that the definition of “military end user” includes national police, and that, in the United States, portions of the U.S. government could meet the definition of national police. Some commenters requested further clarification on the term’s potential scope. The Department confirms that some portions of the U.S. government may qualify as “national police” within the definition of “military end user.” If you have any questions as to whether a particular project involving a department or agency of the U.S. government is controlled in this paragraph, the Department suggests that you address that issue directly with that department or agency or submit a request for a CJ determination to the Department.

Several commenters stated that the phrase “...any person or entity whose actions or functions are intended to support military end uses” is very broad. The Department acknowledges that the definition of military end user is broad and intends it to be so.

One commenter asked whether the scope of “military end uses” is tied to a “military end user” (i.e., are all activities of a “military end user” considered “military end uses”?). The Department notes, as described above, that the definition of “military end user” is borrowed from the EAR. The EAR defines “military end use” in 15 CFR 744.21(f) as 1) incorporation into an item on the USML or the Wassenaar Arrangement Munitions List (WAML) or military commodities subject to the EAR; or 2) the use, development, or production such items. As the Department is borrowing this phrase from the EAR, the Department may look to the EAR, including the definition of “military end use,” for interpretive guidance.

Several commenters stated that it may be difficult to find “documents contemporaneous with the development” for items developed in the past. The Department acknowledges that the contemporaneous documentation may not have been created, may no longer exist, or may not be accessible by the person making the determination. However, if an item described in one of the seven paragraphs is used by a military end user, the lack of contemporaneous documentation will require a determination by the applicant that the item is “specially designed for a military end user” in the absence of a CJ determination that the item is not subject to the ITAR.

Several commenters noted that items not originally designed for a military end user may be within the scope of the control, because no “documents contemporaneous with the development” exist that can substantiate the original intended civil or dual use applications. The Department acknowledges that some items may fall within the scope of the control, even though they were originally developed for civil or dual use applications, because they are now used by a military end user and there is no documentation of the original intention. For the purpose of establishing clear controls, the Department has determined that without such documentation, the items should be USML controlled. However, the Department will consider a request for a CJ determination that the item be determined to be not subject to the ITAR, and may consider any relevant information, such as that which substantiates the original design intent .

One commenter requested that the Department allow a manufacturer to self-determine dual use design intent with post-development documentation. The Department does not accept this comment, as post-development documentation is not a sufficient criteria for self-determination. However, the Department will consider CJ applications supported by post-development documentation.

One commenter stated that one of the purposes of ECR was to avoid design intent based controls. The Department agrees with the commenter that technical parameter based controls are preferred to design intent or end user based controls. However, being unable at this time to determine appropriate technical parameters that differentiate critical military systems from highly capable civil and commercial systems, the Department has adopted the second best option, a design intent based control. As noted above, the Department continues to evaluate the practicality of technical parameter based controls and will be publishing a NOI soliciting public input on suggested control parameters.

One commenter suggested that the Department abandon the term “military end user” and replace it with “military purpose” and suggested a definition:

“Military Purpose” means that the item is intended to have a unique property that, in and of itself, distinguishes it for the purpose of projecting military force, defending against military force or gathering of intelligence directly related to projecting military force or defending against military force.

The Department does not accept the comment. The term “military end user” sufficiently describes those items of most interest to the Department, those that warrant control on the USML, while describing the smallest number of items that do not warrant such control, all of which still have military

applications. Additionally, the Department is borrowing the term “military end user” and its definition from BIS and that harmonization of terms has independent value under ECR. The definition proposed by the commenter would be more difficult to apply and would not sufficiently describe all of the items that provide the United States with a critical military or intelligence advantage, and is therefore insufficient as a USML control criteria.

One commenter suggested that the Department use specially designed as defined in §120.41 and state that items in these paragraphs are not eligible for the releases in §120.41(b). The Department is using specially designed as defined in §120.41, with the addition of an important caveat. The systems controlled using the “specially designed for a military end user” control are systems that would be caught under §120.41(a)(1), and therefore, the releases in paragraph (b) would not be available. The Department determined that such a control would be too restrictive and has introduced the ability to self-determine jurisdiction based on documents contemporaneous to the development that establish commercial or civil applications, similar to releases (b)(4) and (b)(5) of §120.41. The characteristic described under §120.41(a)(1) is being for a military end user, as defined by the Note to Category XII.

The commenter also asked the Department to confirm that the releases in §120.41(b) apply to the items controlled using “specially designed for a military end user.” The Department does not accept this comment. As systems (as opposed to parts, components, accessories, attachments, and software), §120.41(a)(1) governs the "specially designed" analysis and the releases in (b) do not apply..

One commenter stated that the inclusion of the phrase “specially designed for a military end user” generally helps address the jurisdiction of off-the-shelf (commercial) items used with defense articles, but notes that there are many situations when off-the-shelf items do not meet the specifications required for scientific instrumentation developed at universities for civilian end uses. The commenter recommends that the use of “specially designed for a military end user” be extended to ensure that custom-made items used in conjunction with defense articles for civilian end uses are not ITAR controlled. The Department does not accept this recommendation. The Department does confirm that making a custom item for a civilian end user does not make an item “specially designed for a military end user” even if a controlled good is involved. However, if the control parameter is “specially designed for an article in this subchapter”

then making a custom item for a defense article would result in the item being a defense article, even if it is for use by a civilian end user.

Paragraph (a) – Fire control and tracking aiming systems

Paragraph (a) is revised to add subparagraphs (1) through (9) to more clearly describe the articles controlled in (a). Paragraph (a)(2) in the 2nd proposed rule was moved to paragraph (c)(2) in this final rule. This resulted in the remaining subparagraphs of paragraph (a) being renumbered. The Department also reordered subparagraphs (5)-(7) to more logically track the progression of devices, from those that detect ordnance launch, to those that guide the ordnance, and finally to those that track the ordnance. The Department addresses the public comments below.

Paragraph (a)(1) is added for fire control systems.

One commenter requested that the Department clarify the difference between fire control systems in paragraph (a)(1) and the items controlled in paragraphs (a)(2)-(10) of the proposed rule. Because there is a control in paragraph (e) for all specially designed parts and components for fire control systems in paragraph (a)(1) and remote wind-sensing systems specially designed for ballistic-corrected aiming in paragraph (a)(8), but not the other subparagraphs of (a), the commenter stated they were confused about the proper application of the specially designed parts and components controls.

The Department confirms that a fire control system is a complex system that may perform some of the functions described in the other subparagraphs within paragraph (a). Additionally, each item described in another subparagraph of paragraph (a) can be a stand-alone system that is not part of a larger fire control system. When such items are part of a fire control system, all specially designed parts and components are controlled for that larger system, including the parts and components of the subsystem that perform the functions described elsewhere in paragraph (a). However, when they are stand-alone systems, or part of systems other than a fire control system, any specially designed parts and components, not elsewhere specified on the USML, would be subject to the EAR and controlled in Export Control Classification Number (ECCN) 7A611.x.

One commenter requested that the Department provide guidance on how to classify items explicitly described by the prior USML Category XII(a) but no longer described on the USML. The commenter specifically identified periscopes and certain weapon sights, weapon aiming systems, and weapon imaging systems. If such items are described in another paragraph on the USML, such as electro-optical periscopes with infrared capabilities in paragraphs (c)(3) of Category XII or weapons sights or imaging systems in paragraph (c)(2) of Category XII, then they are

controlled there. If they are a specially designed part or component for a fire control system, then they would be controlled in paragraph (e)(1) of Category XII. If they are not described on the USML, then they would be subject to the EAR and controlled in the appropriate ECCN.

One commenter stated that they did not find Remote Weapons Stations (RWS) or Remote Controlled Weapons Stations (RCWS) within the proposed Category XII. The commenter defines RWS as systems that allow a weapon operator to operate and fire a weapon from inside the protection of a building or a wide variety of vehicle, vessel and aircraft platforms; and a RCWS as essentially the same as a RWS, except that it allows the operator to control the weapon from a distant or remote location. The Department partially accepts this comment. An RCW or RCWS that has a weapon in the system is a Category I or Category II weapons system. An RCW or RCWS that does not have an integrated weapon is a fire control system and is described in paragraph (a)(1).

Paragraph (a)(2), formerly paragraph (a)(3) in the 2nd proposed rule, is added for electronic or optical weapon positioning, laying, or spotting systems. The Department received no comments on this proposed control.

Paragraph (a)(3), formerly paragraph (a)(4) in the 2nd proposed rule, is added for certain laser spot trackers and laser spot detectors that are for laser

target designators or coded laser target markers controlled in paragraph (b)(1). The Department revised this control from the 1st proposed rule by tying it to paragraph (b)(1) to more specifically describe the kinds of items controlled by this paragraph. The Department received no comments on this proposed control.

Paragraph (a)(4), formerly paragraph (a)(5) in the 2nd proposed rule, is added for bomb sights and bombing computers. The Department received no comments on this proposed control.

Paragraph (a)(5), formerly paragraph (a)(8) in the 2nd proposed rule, is added for electro-optical systems that automatically detect and locate ordnance launch, blast, or fire. The Department determined that the control text in the 2nd proposed rule was inexact, as it identified weapons launch or fire, where the launch, blast or fire is actually of the ordnance from the weapon. Therefore, the Department revised the control text to more clearly state the scope of the control. The Department received no comments on this proposed control.

Paragraph (a)(6), formerly paragraph (a)(7) in the 2nd proposed rule, is added for electro-optical ordnance guidance systems. The Department received no comments on this proposed control.

Paragraph (a)(7), formerly paragraph (a)(6) in the 2nd proposed rule, is added for missile or ordnance electro-optical tracking systems. One commenter noted that some military sensor pods do not clearly meet the description of paragraph (a)(6) or (a)(7) in the 2nd proposed rule, but which are treated as USML today and which the commenter believes warrant continued USML control. The Department accepts this comment and revised the control to more clearly state the scope of the control is for electro-optical systems for tracking missiles or ordnance. The Department also revised paragraph (c)(3) to describe military reconnaissance, surveillance, target detection, or target acquisition systems, which includes the sensor pods identified by the commenter.

Paragraph (a)(8), formerly paragraph (a)(9) in the 2nd proposed rule, is added for remote wind sensing systems specially designed for ballistic-corrected aiming. One commenter stated that the use of the word remote in the control would remove systems mounted on vehicles from the scope of the control. The Department does not accept this comment. The control text does not require that the wind sensing system be remote from the weapons system. The systems described in paragraph (a)(8) are those that sense the wind at a remote location to provide ballistic corrected aiming for the

delivery of munitions or ordnance to a target, presumably at, or near the location where the wind is being sensed.

Paragraph (a)(9), formerly paragraph (a)(10) in the 2nd proposed rule, is added for certain helmet mounted display (HMD) systems. The Department redrafted the control to maintain the scope, but make it easier to read. The Department also moved the exemplary parenthetical in the 2nd proposed rule to its new location in order to clarify the types of items intended to be captured by the control.

One commenter stated that the control is difficult to read and that the commenter read it to control HMDs that have the ability to connect to a weapons sight. The Department accepts this comment and has revised the control text by setting out the various elements in subparagraphs to more clearly articulate the scope of the control. The Department also confirms that the paragraph does not control a HMD solely on the basis of being capable of connecting to a weapons sight.

One commenter noted that the control is designated Significant Military Equipment (SME), as is all of paragraph (a), but that it controls equipment very similar to the HMDs controlled in Category VIII, which are not designated SME. The Department accepts this comment and has removed the SME designation from this control.

One commenter requested that the Department add “specially designed for military end use” to this control. The Department does not accept this comment. The items described in this control have significant military utility and no non-military applications have been identified.

Paragraph (b) – Laser systems

Paragraph (b) is revised to add subparagraphs (1) through (7) to more clearly describe the articles controlled in (b). Controls on lasers and others parts and components of laser systems are moved to paragraph (e).

Paragraph (b)(1) is added for laser target designators or coded target markers that mediate the delivery of ordnance to a target. The Department received no comments on this proposed control.

Paragraph (b)(2) is added for infrared laser target illumination systems having a variable beam divergence. The Department made the control text from the 2nd proposed rule more specific by adding “or track” to more completely describe the defense articles controlled by this paragraph.

One commenter requested that the Department define “target” and limit the control to only laser-based illumination systems that are designed and intended for use with weapons systems or other military applications. The Department does not accept this comment. The Department believes that the systems described by the control, variable beam infrared target

illumination systems, are used primarily by the military and the commenter provided no specific examples of civil or commercial systems.

One commenter requested that the Department add “specially designed for military end use” to the control. The Department does not accept this comment. The systems identified by the commenter are not variable beam systems, and no such non-military systems have been identified. Thus, there is no reason to so limit the control because it already only controls military systems.

Paragraph (b)(3) is added for certain laser range finders that either: 1) operate at a wavelength of 1064 nm and have a Q-switched pulse output, or 2) operate in excess of 1064 nm and meet certain technical parameters. The Department revised subparagraph (A) to clarify that systems that send out multiple laser pulses within one second are also within the scope of the control.

One commenter stated that laser range finders are ubiquitous and used in civil and commercial applications involving light detection and ranging (LIDAR) and laser detection and ranging (LADAR), and requested that the Department replace the control parameters with “specially designed for military end use.” The Department does not accept this comment. This

control is for stand-alone laser range finders, the LIDAR and LADAR systems on the USML are described in paragraph (b)(6).

One commenter stated that civil and commercial systems use long range laser range finders and requested that the Department revise the control to state: “A system which is capable of calculating a certified Category I or II target location solution, using navigation data embedded in the system or externally supplied, and laser rangefinder data.” The Department does not accept this comment. The civil applications identified by the commenter do not meet the accuracy parameters of the control text.

Paragraph (b)(4) is added for certain targeting or target location systems. One commenter stated that the control would describe commercial and civil systems, such as robotic package handling. The Department does not accept the comment because the control requires that the item include a Global Navigation Satellite System (GNSS), guidance, or navigation defense article controlled in paragraph (d). The Department has revised the text of the control to more clearly describe the items controlled.

Paragraph (b)(5) is added for optical augmentation systems. Several commenters stated that commercial and civil systems use infrared retroreflectance, such as commercial automotive, biometric, and 3D imaging, and requested that the Department remove the word “personnel” and insert

the descriptor “military.” The Department partially accepts the comment by removing the word “personnel,” which addresses the applications identified by the commenters. The Department does not believe that the civil or automotive applications described by the commenters meet the control text. However, if there is any confusion regarding the jurisdiction of a specific item, the Department encourages exporters to submit a request for a CJ determination.

Paragraph (b)(6) is added for light detection and ranging (LIDAR), laser detection and ranging (LADAR), or range-gated systems specially designed for a military end user. One commenter stated inclusion of the phrase “specially designed for a military end user” resolves any question regarding the jurisdiction of their meteorological LIDARs. The Department accepts the comment.

Paragraph (b)(7) is added for developmental lasers and laser systems funded by the Department of Defense (DoD), with certain exceptions. Several commenters submitted comments on (b)(7), as well as the other developmental paragraphs in the 2nd proposed rule, paragraphs (c)(9), (d)(6) and (e)(23), now paragraphs (c)(10), (d)(6) and (e)(24). The Department does not accept these comments.

Several commenters stated that controlling future systems during their development based solely on DoD funding improperly presumed that all items funded by the DoD under this category are for military end use, that such a control would impede multi-source funding by universities and companies, and that DoD contracting officers may not be willing to make an export control jurisdiction determination in the contracting documents. The Department does not accept this comment. The developmental paragraphs only control items during their developmental phase, based on the premise that the government does not know, and thus cannot positively describe, those items that will be developed in the future. The Department did not explicitly limit the control text with a phrase such as “specially designed for a military end use” because the determination of the military utility of a DoD-funded system at its developmental stage is a role for the government. An item being developed with whole or partial DoD funding will be outside the scope of this control if the funding document with DoD simply states that it is being developed for both civil and military applications. The contract need not, and should not, make a jurisdictional determination. For items with civil or commercial applications that nonetheless warrant ITAR control because they provide a critical military or intelligence advantage, the Department will have the ability to explicitly add them to the USML,

notwithstanding the statement in the funding document, whether in production or development. DoD has undertaken a substantial effort to educate contracting officers and others in the DoD research and supply chain communities regarding the scope and intent of these developmental paragraphs. Additionally, a request for a CJ determination is another means of determining if a specific DoD-funded developmental item warrants ITAR control. These developmental paragraphs have been included in other USML Categories as part of the ECR review and appear to be working smoothly.

One commenter expressed concern that the developmental control would prevent fundamental research funded by DoD. The Department does not accept this comment. The ITAR currently allows fundamental research into defense technologies at accredited U.S. colleges and universities. See §120.11(a)(8). The inclusion of these developmental systems on the USML does not change the ability of researchers to conduct fundamental research and publish the results. Publication and dissemination restrictions in the funding documents will be the primary mechanism for determining if DoD funding of a project prohibits that project from being considered as fundamental research.

One commenter asked the Department to clarify how the CJ determination release in Note 1 will work for an item identified in another

USML paragraph because Note 2 states that Note 1 does not apply to items enumerated elsewhere on the USML. The commenter specifically inquired as to how this will interact with the control in paragraph (b)(6) for LIDAR systems specially designed for a military end user. If the Department issues a CJ determination that an item is not subject to the ITAR, then that item is not specially designed under §120.41. The item is no longer described in a paragraph that uses specially designed as a control parameter, whether that control is for items specially designed for a defense article or specially designed for a military end user. Therefore, the item for which the CJ applied would not be within another USML paragraph and Note 2 would not apply.

Paragraph (c) – Imaging systems or end items

Paragraph (c) is revised to add subparagraphs (1) through (10) to more clearly describe the articles controlled in (c). Controls on night vision and infrared cameras are moved from paragraph (c)(1) in the 2nd proposed rule to paragraph (e)(4) and comments on paragraph (c)(1) will be addressed below. Controls on weapons sights and weapon imaging systems are moved from paragraph (a) of the proposed rule to paragraph (c).

Paragraph (c)(1), formerly paragraph (c)(2) in the 2nd proposed rule, is added for certain binoculars, bioculars, monoculars, goggles, or head or

helmet-mounted imaging systems. The Department revised the text from the 2nd proposed rule to clarify the scope of the control. Subparagraph (i) is revised to clarify that it controls articles that employ autogated third generation image intensifier tubes (IITs) or a higher generation IIT. The Department revised subparagraph (ii) to clarify that it controls articles that are sensor fused with an IIT and an infrared focal plane array (IRFPA) having a peak response wavelength greater than 1,000 nm. Such articles with an IRFPA or infrared imaging camera are controlled if specially designed for a military end user.

One commenter requested that the Department add “head or helmet-mounted” to the parenthetical in paragraph (c)(1). The Department does not accept this comment because the text would be redundant. The control is for systems where both the sensor and the display are on the head or helmet. However, there may be such systems where the sensor and a near-to-eye display are both attached to the head or the helmet, but not attached to each other.

One commenter stated that the control describes hardware used for medical applications and requested that the Department add “specifically designed for military systems” to the entire control. The Department does not accept this comment. As noted above, the control is for systems where

both the sensor and the display are on the head or helmet. The Department is unaware of such systems that include the sensors described in the control being used in medical applications. The commenter did not provide any examples of such systems.

One commenter stated that a monocular could be within the scope of this control, even if it is not specially designed for a military end use and it includes an IIT that is not ITAR controlled, simply because the IIT is an autogated third generation IIT. The Department confirms this comment. Monoculars and other similar systems with an autogated third generation IIT have significant military capability and provide the United States with a critical military and intelligence advantage. Therefore, they warrant ITAR control.

The commenter further stated that it was incongruous to have the control on IITs, in paragraph (e), different from the control parameter for binoculars, bioculars, monoculars, goggles, or head or helmet-mounted imaging systems that incorporate an IIT. The comment claimed that a monocular could include a non-autogated third generation IIT that was specially designed for a defense article, and that in such a scenario the monocular would be subject to the EAR, even though it includes an IIT that is ITAR controlled. The Department does not accept this comment. If a non-

autogated third generation IIT is controlled in paragraph (e)(7) (paragraph (e)(6) in the 2nd proposed rule) on the basis of being specially designed for a defense article, the use of that IIT in a monocular that is not otherwise within the scope of (c)(1) would result in the IIT being not specially designed on the basis of §120.41(b)(3). Therefore, a monocular subject to the EAR cannot include an IIT that is subject to the ITAR, excluding a developmental monocular or a DOD funded developmental IIT.

Paragraph (c)(2) is added for weapons sights and aiming or imaging systems, specially designed to mount to a weapon or to withstand weapon shock or recoil, with certain IRFPAs, IITs, ballistic computers, or lasers. These items were described in paragraph (a)(2) of the 2nd proposed rule. The Department moved the control to paragraph (c) as these systems are controlled largely on the basis of the incorporation of an imaging device, such as an IRFPA or IIT and are similar to the items described in paragraph (c)(1).

One commenter requested that the Department define “weapons sight.” The Department does not accept this comment to the extent that it asks for “weapons sight” to be a defined term. However, the Department has revised the control text to describe those items that are within the scope of the control more directly. The Department added the parenthetical phrase

“(i.e., with a reticle)” following weapon sight to more specifically identify the items described by that term. The Department also added that the systems must be specially designed to mount to a weapon or specially designed to withstand weapon shock or recoil. These features are critical capabilities for differentiating a weapons sight from other infrared and night vision devices.

One commenter stated that the inclusion of clip-on systems in the same sub-category as weapons sights creates confusion and recommended that clip-on systems be separated into another subcategory as they are multi-functional devices and are not directly related to designated weapon sights. The Department does not accept this comment. A clip-on is controlled if it is specially designed to mount to a weapon or specially designed to withstand weapon shock or recoil, and meets one of the technical parameters. The Department notes that the control is for clip-ons that are specially designed to attach to a weapon, not to a day-scope. This means that a clip-on that is truly multi-functional, and designed to attach to binoculars, monoculars, and other infrared and night vision devices via a universal attachment, would not be controlled in this paragraph, unless it was also specially designed to withstand weapons shock or recoil. Systems specially designed for weapons shock warrant USML control.

One commenter stated that the controls in the 2nd proposed rule would include weapons sights incorporating 2nd generation IITs, some of which have previously been subject to the EAR. The Department acknowledges the comment and adopts a technical parameter of 350 microamps per lumen for the control.

One commenter stated that the 2nd proposed rule would include any night vision weapon sight specially designed for any type of weapon listed in Category I of the USML. The Department confirms this understanding. While the Department has revised the control parameter from “specially designed for a defense article” to “specially designed to mount to a weapon to withstand weapon shock or recoil,” this change is a clarification only that does not reduce the scope of the control.

One commenter noted that the “specially designed for a military end user” control was not used for weapons sights, but was used for the binoculars, bioculars, monoculars, goggles, or head or helmet-mounted imaging systems in paragraph (c)(2) of the 2nd proposed rule. The Department acknowledges the comment. The Department was able to describe those weapons sights and imaging or aiming systems that warrant USML control positively using technical parameters. Unfortunately, that was not possible for certain binoculars, bioculars, monoculars, goggles, or

head or helmet-mounted imaging systems, so they are controlled when specially designed for a military end user.

One commenter claimed that the 2nd proposed rule described weapons sights in a way that could make an infrared imaging camera a weapons sight. The Department does not accept this comment. Additionally, the Department has revised the control to more specifically describe those items.

One commenter requested that the Department limit the scope of the control based on the incorporation of an infrared focal plane array to systems with two-dimensional arrays. The Department does not accept this comment. If a system meets all of the other parameters of the control and the IRFPA is a one-dimensional array, that system still warrants control on the USML.

Paragraph (c)(3) is added for electro-optical reconnaissance, surveillance, target detection, or target acquisition systems, specially designed for defense articles. The Department consolidated the control in paragraph (c)(3) of the 2nd proposed rule for targeting systems with the control in paragraph (c)(5)(ix) for all infrared systems that are specially designed for a defense article. This also addresses the comment to paragraph (a)(7), described above. The Department also incorporated the missile technology control designation (MT) from paragraph (c)(5)(ix).

Paragraph (c)(4) is added for certain infrared search and track (IRST) systems. The Department revised this control to include the positive technical parameter based control that was published in the 2nd proposed rule, for systems that utilize a longwave IRFPA and maintain positional or angular state of a target through time, and added a separate control for all other IRST systems that are specially designed for a military end user. The Department revised this control from the 1st proposed rule in response to public comments regarding certain non-military systems.

Two commenters expressed concern that certain civil and commercial systems that utilize long wave infrared imaging, such as a civil automotive system for searching and tracking pedestrians and other vehicles and aerial commercial systems used for infrared detection and quantification of hydrocarbon gas leaks (e.g., methane), may be controlled. One commenter requested that the Department add the control parameter “for military applications” and the other asked the Department to move the control into paragraph (c)(5). The Department does not accept these comments. The Department confirms that IRST is a military capability used in airborne and naval platforms and does not include normal commercial systems such as civilian automotive and hydrocarbon gas leak detection systems.

Paragraph (c)(5) is added for infrared distributed aperture systems that are specially designed for defense articles. This paragraph was not expressly in the 2nd proposed rule, but the items described in this entry were within the control in paragraph (c)(5)(ix) of the 2nd proposed rule. This logically includes all infrared systems that are specially designed for a defense article, and thus would include all such distributed aperture systems with infrared detectors, including those with additional visible light or other non-infrared detectors.

Paragraph (c)(6), formerly paragraph (c)(5) in the 2nd proposed rule, is added for certain infrared imaging systems, described in eight subparagraphs. These paragraphs describe systems with infrared detectors, including those with additional visible light or other non-infrared detectors. One commenter requested that the Department define imaging systems and suggested that such definition exclude those systems that include an infrared detector but which do not use the detector to capture video or pictures. The Department does not accept this comment. Paragraph (c)(6) controls systems that have an infrared imager and does not require that those system produce a human viewable image. The commenter also noted confusion with classifying their items within the USML, noting that systems described in USML Category XI(a)(4)(i) may include an imager. The Department notes

that USML Category XI(a) explicitly states that it is for systems not described in USML Category XII. Therefore, if your system is described in USML Category XII, that is where it should be classified.

Subparagraph (i) is added for mobile systems that provide real-time target recognition at ranges greater than 3 km and includes a note to describe the size of the target that the system must be able to identify. One commenter suggested that the proposed control text was broad and would include non-military systems used for search and rescue, civil law enforcement, border protection, and commercial applications related to security surveillance systems for high value asset protection. The Department accepted this comment and revised the control to more specifically describe the critical military systems. The Department revised the control by switching the operative function from “target location” to “target recognition” and added a note to describe the size of the target as a NATO standard tank. The Department moved the range from 5km to 3km because target locating is possible at twice the distance as target recognition. Therefore, the change is actually an increase in the capabilities of the systems that are subject to control.

Subparagraph (ii) is added for airborne stabilized systems specially designed for military reconnaissance. The Department received no comments on this proposed control.

Subparagraph (iii) is added for automated multispectral imaging systems that classify or identify military or intelligence targets or characteristics. Two commenters stated that the proposed control could describe civil and commercial multispectral systems because it is unknown whether the spectral signatures that they classify are considered military or intelligence characteristics by the Department. The Department accepts this comment and revised the control to only those systems that provide automated classification or identification of the military or intelligence targets or characteristics.

Subparagraph (iv) is added for automated missile detection or warning systems. The Department received no comments on this proposed control.

Subparagraph (v) is added for systems hardened to withstand electromagnetic pulse (EMP), directed energy, chemical, biological, or radiological threats. The Department revised subparagraph (v) to include infrared imaging systems hardened against directed energy weapons. Such systems are also described in USML Category XVIII, but the Department determined that the inclusion in this subparagraph would assist exporters in

the identification of their systems, as this subparagraph controls similarly shielded systems. The Department received no comments on this proposed control.

Subparagraph (vi) is added for systems incorporating mechanisms to reduce the optical chain signature for optical augmentation. One commenter stated that the proposed control could describe non-military systems, as it did not describe the kind of signature or level of signature reduction that would trigger the control. The commenter noted that a commercial infrared imaging system incorporating insulation that provides audible noise reduction or flat black paint to reduce reflections could be described, as noise reduction and reflection reduction could be considered signature reduction. The Department accepts this comment and revised the control to identify the optical chain signature for optical augmentation specifically.

Subparagraph (vii) is added for certain aerial persistent surveillance systems. The Department clarified the proposed control by noting that the technical parameters for systems that can detect a certain ground sample distance at 10,000 feet above ground level also described systems that can obtain the same or greater performance at greater altitude. The Department received no comments on this proposed control.

Subparagraph (viii) is added for certain gimbaled infrared systems.

Two commenters stated that the control for a turret with a ball of 15 inches or greater includes civil and commercial systems. The commenters asserted that large sized turret balls are not a uniquely military capability and that the commercial and civil users require large turret balls as well. The Department does not accept these comments. Stable turrets with balls greater than 15 inches provide significant military capability and warrant ITAR control.

Paragraph (c)(7), formerly paragraph (c)(6) in the 2nd proposed rule, is added for certain terahertz imaging systems. One commenter requested that the Department limit the terahertz imaging systems within the control to concealed object detection systems to mirror the dual use control in ECCN 2A984. The Department partially accepts this comment. The Department revised the control to limit those systems meeting or exceeding the technical parameters described in the 2nd proposed rule to concealed object detection systems, and added an additional control for all terahertz imaging systems specially designed for a military end user. As a result of the revision to the control text, the Department of Commerce revised ECCN 2A984 by changing the lower end of the controls from 0.5 milliradians to 0.1 milliradians, and the Department is making conforming changes to USML

Category XI, paragraphs (a)(3)(ii) and (a)(10), which exclude those items controlled in ECCN 2A984.

Paragraph (c)(8), formerly paragraph (c)(7) in the 2nd proposed rule, is added for systems or equipment incorporating an ultraviolet or infrared beacon or emitter specially designed for Combat Identification. The Department revised this entry to include ultraviolet Combat Identification systems. The Department received no comments on this proposed control.

Paragraph (c)(9), formerly paragraph (c)(8) in the 2nd proposed rule, is added for systems that project radiometrically calibrated scenes directly into the entrance aperture of an electro-optical or infrared (EO/IR) sensor controlled in this subchapter within either the spectral band exceeding 10 nm but not exceeding 400 nm, or the spectral band exceeding 900 nm but not exceeding 30,000 nm. The Department received no comments on this proposed control.

Paragraph (c)(10), formerly paragraph (c)(9) in the 2nd proposed rule, is added for developmental imaging systems funded by the DoD.

One commenter stated that the developmental paragraph should be deleted because DoD funds basic research. The Department does not accept this comment.

One commenter stated that it supported the developmental paragraph due to the inclusion of Note 1. The commenter stated that throughout the microelectronics industry, there are many “electro-optical” companies that have received rather modest, yet ultimately critical research and development funding from DoD to migrate their core commercial off-the-shelf (COTS) technology into specialized and vitally important applications in support of the Armed Forces. According to the commenter, in many cases, that research and development funding was sufficiently necessary that, but for such funding, the Armed Forces would not have gained the support of a given manufacturer. The costs of migrating a COTS product to a specialized military item, even if relatively modest technically, might have been too expensive for a small company to undertake, given the relatively fewer units that would eventually be sold for military uses. The commenter noted that Note 1 allows DoD to specify upfront and without ambiguity what will be the desired status of DoD-funded research and development efforts in private industry. If the contract explicitly specifies that the intended results of such a research and development program are to enable “both civil and military applications,” that specificity will, by itself, be sufficient to settle whether the “military” version is to be treated as an ITAR-controlled item. The commenter continued that the principle set out in Note 1 is that, once

DoD has so stated, then the resulting “military” part is to be considered outside the purview of USML Category XII and to be controlled only under the EAR. That removes both ambiguity and cost to private industry, directly in understanding what will happen to the item even before it is developed and then, afterwards, when that item has been developed and goes to actual commercial production and distribution, including elimination of an unnecessary CJ request. The Department accepts this comment.

Paragraph (d) – Guidance and navigation systems

Paragraph (d) is revised to add subparagraphs (1) through (6) to more clearly describe the articles controlled. One commenter requested that the Department revise the introductory text in proposed paragraph (d) by adding “specially designed for military systems” to clarify that industrial control systems are not within the scope of this paragraph, citing, for example, an industrial control system that performs a function which involves linear acceleration levels exceeding 25g. The Department partially accepts this comment. The Department revised the introductory text to guidance and navigation systems and end items, and also removed “control” from paragraph (d)(1). This paragraph is for guidance and navigation systems that control the movement of other systems, not for industrial control systems.

Paragraph (d)(1) is added for certain guidance or navigation systems. The Department revised the text of paragraph (d)(1)(i) from the proposed by correcting “circle of equal probability” to “circular error probability”.

One commenter stated that the use of technical parameters, in paragraph (d)(1) and the controls for accelerometers and gyroscopes in paragraph (e), without limiting the control to those systems “specially designed” for the military, could result in commercial products being controlled on the USML, particularly if the items are validated on an individual item-by-item basis, rather than as a product line, due to run-to-run variation in performance. The Department does not accept this comment to the extent it is a request to include “specially designed for the military” as a control parameter. The Department notes that the question of whether a system is validated to USML technical control parameter thresholds on an individual item-by-item basis or on a product line basis is a question that involves all of the USML. The Department will address this issue in a separate rulemaking.

One commenter requested that the Department add the word “or” between each subparagraph, rather than just the final two subparagraphs, to clarify that the systems need only meet one of the technical parameters. In response to this comment, the Department revised the introductory text to

paragraph (d)(1) to state “having any of the following” to clarify that an item will be within the scope of this control if it meets any of the technical parameters identified.

One commenter suggested that the Department delete paragraph (d)(1) in its entirety. The commenter reasoned that the MT control text in the parenthetical describes those systems that warrant control. The Department does not accept this comment. An MT parenthetical is not control text. It is an identification of those portions of the control text that are controlled for missile technology reasons and are reviewed under the missile technology review policies. If the system is not described in the control text, it is not subject to the USML.

One commenter requested that the Department add “for airborne applications” in paragraph (d)(1)(i), “for land applications” in paragraph (d)(1)(ii), and “for maritime applications” in paragraph (d)(1)(iii). The Department does not accept this comment. While paragraph (d)(1)(i) will primarily describe systems that are used in airborne applications, paragraph (d)(1)(ii) will primarily describe systems that are used in land applications, and paragraph (d)(1)(iii) will primarily describe systems that are used in maritime applications, the controls are based on the technical parameters.

One commenter requested that the Department add “without the use of positional aiding references” to proposed paragraph (d)(1)(ii). The Department accepts this comment.

One commenter requested that the Department adding the qualifier “50%” to the term “CEP” used in proposed paragraphs (d)(1)(i) and (d)(1)(iii) to clarify that 50% is the appropriate threshold, not 95%. The Department accepts this comment.

Several commenters requested that the Department revise proposed paragraph (d)(1)(iv) to control only those systems that meet or exceed its normal performance parameters at linear acceleration levels exceeding 25g, as opposed to those systems that merely continue to function with degraded performance. The Department accepts this comment.

One commenter requested that the Department increase the performance parameter in proposed paragraph (d)(1)(iv) from 25g to 35g. The Department does not accept this comment. Providing a high level of performance at linear acceleration levels exceeding 25g provides a critical military or intelligence advantage and warrants ITAR control.

One commenter requested that the Department revise the control parameter to “continuous linear accelerations levels” to avoid controlling those items that can continue to function after a shock or period that includes

a 25g environment. The Department does not accept this comment. The control is for systems that provide continued performance during a 25g or greater environment, not those systems that can operate after such shock or environment (such as space launch) has ceased.

One commenter requested that the Department add a note, mirroring a note in the EAR, stating, “[Such equipment and systems] incorporate accelerometers or gyroscopes to measure velocity and orientation in order to determine or maintain heading or position without requiring an external reference once aligned.” The Department does not accept this comment. The proposed note is a generally accurate description of modern guidance and navigation systems. However, the control in this paragraph is intended to describe all guidance and navigation systems that meet the technical parameters, so such a note that is limited to today’s technology would not be appropriate.

Paragraph (d)(2) is added for GNSS receiving equipment. This control is moved from Category XV(c). The Department revised paragraphs (d)(2)(iii) and (d)(2)(iv) to clarify that the controls apply to all GNSS systems, not just U.S. Global Positioning System (GPS) systems.

One commenter stated that the control in paragraph (d)(2)(i) includes all GNSS systems that are specially designed for the military, even if those

systems do not have specific military GNSS capabilities, such as military-grade encryption or access to the U.S. military-only precise positioning service (PPS) signals. The Department confirms this comment. All GNSS receiving equipment that is specially designed for the military warrants ITAR control. Since GPS was first identified on the USML in 1992, the USML has included all receiving equipment specifically designed, modified, or configured for military use in Category XV(c). When the Department revised Category XV in 2014 as part of ECR, the phrase “specifically designed, modified, or configured for military use” was replaced with the new control text “specially designed for military application” to reflect the updated ECR terminology. The scope of the control was not changed, and any item that would be within the scope of the proposed control is, and has been, ITAR controlled. For questions about the jurisdiction of a particular piece of GNSS receiving equipment, please review the definition of specially designed in §120.41, and if you have any further doubt, please submit an application for a CJ determination.

One commenter noted there are discrepancies between the parenthetical MT reference for paragraph (d)(2)(i) and the Missile Technology Control Regime (MTCR) Annex in §121.16. The Department acknowledges that §121.16 is out of date, it was last updated in 2006, and it

will be removed through a separate rulemaking. The parenthetical MT references in each paragraph are current and more accurately reflect U.S. international commitments.

One commenter stated that the GNSS receiving equipment in paragraph (d)(2)(iii), specially designed for use with an antenna described in Category XI(c)(10), may soon include commercial and civil system, due to advancements in the field. The Department does not accept this comment. This control is for GNSS receiving equipment that uses the military antennae identified in Category XI(c)(10). If the antennae currently described in Category XI(c)(10) are in such wide commercial use that USML control is no longer appropriate, then the solution is to revise Category XI(c)(10). The Department is committed to continuously reviewing the USML and is currently finalizing the first final rule to re-review the first USML categories that were revised as part of ECR. The Department will continue to re-review the categories published under ECR.

Paragraph (d)(3) is added for GNSS anti-jam systems specially designed for use with the anti-jam antennae described in Category XI(c)(10). One commenter stated that the GNSS anti-jam systems in paragraph (d)(3), specially designed for use with an antenna described in Category XI(c)(10), may soon include commercial and civil systems, due to advancements in the

field. The Department does not accept this comment. As discussed above, the issue of commercial use of antennae described in Category XI(c)(10) should be address through Category XI.

Paragraph (d)(4) is added for certain mobile relative gravimeters. The Department received no comments on this paragraph.

Paragraph (d)(5) is added for certain mobile gravity gradiometers. The Department received no comments on this paragraph.

Paragraph (d)(6) is added for developmental guidance, navigation, or control systems funded by the DoD. Several commenters stated that developmental funding from DoD is not a proper control parameter. The Department does not agree, as discussed above in paragraphs (b)(6) and (c)(10).

Paragraph (e) – Parts, components, accessories, and attachments

Paragraph (e) is revised to add subparagraphs (1) through (24) to more clearly describe the parts and components for the systems in (a) – (d) that are controlled in (e).

One commenter requested that the Department add “specially designed for a military end use” to the introductory text. The Department does not accept this comment. Each subparagraph within paragraph (e) stands on its own terms. Additionally, the Department does not agree that

the term “military use” is a clear control parameter when applied to all of the items within paragraph (e).

One commenter requested that the Department identify military-grade items by technical parameter, rather than control those specially designed for another defense article, specifically discussing IITs, IRFPAs, and thermal imaging cores. The Department does not accept this comment. The Department published the 1st proposed rule, which identified most items in this Category, and specifically IITs, IRFPAs, and thermal imaging cores, by technical parameters. The public comments in response to the 1st proposed rule showed that the technical parameters identified by the Department did not adequately distinguish civil and military systems but did not provide alternative technical parameters that would adequately distinguish the critical military systems. The Department is open to replacing the existing controls with objective technical parameters and will invite public comments on how to accomplish this in a future rulemaking.

Paragraph (e)(1) is added for parts and components specially designed for articles described in paragraph (a)(1) or (a)(5). The 2nd proposed rule identified parts and components specially designed for articles described in paragraph (a)(1) or (a)(8), and paragraph (a)(8) from the 2nd proposed rule is paragraph (a)(5) in this final rule.

One commenter requested that the Department clarify how paragraph (b)(3) of specially designed in §120.41 applies to the parts and components of the now paragraph (a)(5) systems. The Department notes that, in determining if a part or component of an (a)(5) system is specially designed for that system, it is easier to move to paragraphs (a)(2) of §120.41. While the part or component may also meet the criteria in paragraphs (a)(1) of §120.41, such analysis is not necessary if it also meets (a)(2). If the item is a part or component, a necessary condition for control under paragraph (e)(1), paragraph (b) of §120.41 applies, including (b)(3). Assuming that the item has not been subject to a CJ determination under (b)(1), is not one of the minor types of items identified in (b)(2), and that contemporaneous development documentation does not exist for (b)(4) or (b)(5), the item can be released under (b)(3), if it meets the criteria.

Paragraph (e)(2) is added for lasers specially designed for defense articles. The Department received no comments on this proposed control.

Paragraph (e)(3) is added for laser stacked arrays specially designed for defense articles. The Department received no comments on this proposed control.

Paragraph (e)(4), formerly paragraph (c)(1) in the 2nd proposed rule, is added for night vision or infrared cameras specially designed for defense

articles. The Department moved this entry from paragraph (c)(1) of the 2nd proposed rule to list all components controlled in paragraph (e) and to respond to several public comments asking about the applicability of paragraph (b) of §120.41 due to the control's inclusion within paragraph (c). The Department confirms that the releases in paragraph (b) of specially designed in §120.41 may be applied when determining if a night vision or infrared camera is with the scope of paragraph (e)(4). One commenter also stated that the detector and camera used in commercial LADAR systems would be included within the control. The Department does not accept this comment. If a LADAR system is itself a defense article under paragraph (b)(6), or another entry on the USML, then a detector or camera that is specially designed for that LADAR would itself be USML controlled. However, if the LADAR is not itself a defense article, or the detector or camera is not specially designed for a defense article LADAR, then the detector or camera would not be USML controlled.

Paragraph (e)(5), formerly paragraph (e)(4) in the 2nd proposed rule, is added for IRFPAs specially designed for defense articles. The Department received only comments in support of this proposed control.

Paragraph (e)(6), formerly paragraph (e)(5) in the 2nd proposed rule, is added for certain charge multiplication focal plane arrays specially designed

for defense articles. The Department received no comments on this proposed control.

Paragraph (e)(7), formerly paragraph (e)(6) in the 2nd proposed rule, is added for second generation and greater IITs specially designed for defense articles, and specially designed parts and components therefor. This control includes third generation IITs, Electron Bombarded Active Pixel Sensor (EBAPS), night vision and thermal fused IITs, and all subsequent IIT designs that are specially designed for a defense article.

One commenter stated that, as the integrator of IITs into higher-level assemblies, they would not necessarily be capable of classifying the IITs that they obtain from manufacturers, particularly foreign manufacturers. The Department does not accept this comment. An exporter must classify the item based on the information available. If the exporter is using the IIT in a defense article, it therefore meets the catch in paragraph (a)(2) of specially designed in §120.41; then it is specially designed, unless the exporters know that one of the releases in paragraph (b) applies. If the exporter is using the IIT in an item subject to the EAR, as long as that item is in production the exporter knows that paragraph (b)(3) of §120.41 is met, regardless of any other information about the IIT.

The commenter further stated that the proposed control text creates a potential for all 2nd generation and above IITs to be subject to the ITAR, unless the foreign manufacturers can provide contemporaneous data to prove their design intent. The Department does not accept this comment. If an IIT is only used in defense articles, then it is true that it is within the scope of paragraph (e)(7), unless there is a CJ determination or the manufacturer has contemporaneous developmental documentation showing dual use intent. However, if the IIT is used in items that are subject to the EAR, paragraph (b)(3) of §120.41 is met and the IIT would not be specially designed.

Paragraph (e)(8), formerly paragraph (e)(7) in the 2nd proposed rule, is added for parts and components specially designed for articles described in paragraph (c)(3), (c)(4), (c)(5), or (c)(6)(vi)-(vii). The Department revised paragraph (e)(8) of the proposed rule by adding paragraph (c)(5) and updating the numbering to reflect the revised numbering in this final rule. The Department received no comments on this proposed control.

Paragraph (e)(9), formerly paragraph (e)(8) in the 2nd proposed rule, is added for inertial measurement units specially designed for defense articles. The Department received no comments on this proposed control.

Paragraph (e)(10), formerly paragraph (e)(9) in the 2nd proposed rule, is added for GNSS security devices, Selective Availability Anti-Spoofing

Module (SAASM), Security Module (SM), and Auxiliary Output Chip (AOC) chips. The Department received no comments on this proposed control.

Paragraph (e)(11), formerly paragraph (e)(10) in the 2nd proposed rule, is added for accelerometers that meet certain technical parameters. One commenter requested that licensing jurisdiction of these items be determined based on the ensemble performance of a particular device model (a product line), and not based on the performance of an individual sensor. As noted above in a response to a similar comment to paragraph (d)(1), this is a question that involves all of the USML and the Department will address it in a separate rulemaking.

Paragraph (e)(12), formerly paragraph (e)(11) in the 2nd proposed rule, is added for certain gyroscopes and angular rate sensors that meet the technical parameters.

One comment noted the term in the control text, namely “bias,” is different from the term in the MT parenthetical, namely “drift,” and suggested that the Department revise the MT parenthetical to use “bias.” The Department does not accept this comment. The control text defines the scope of the items on the USML. An MT parenthetical only identifies that portion of the items covered by the control text for which licenses for export will be

reviewed under missile technology review policies. The MT text is drawn from the Missile Technology Control Regime Annex, a multilaterally agreed control list.

One commenter stated that the MT parenthetical should be revised to apply to items that are specified to function at constant acceleration levels greater than 100g, to clarify that the control does not apply to systems that can survive such a shock, but do not perform to specifications through shock levels above 100g. The Department confirms that this portion of the MT parenthetical only applies to those systems that continue to function to specification during a 100g environment. The Department is not revising the text of the MT parenthetical. As noted above, the MT parenthetical does not determine jurisdiction, only the license review policies of those items described in the control text.

One commenter stated that the MT parenthetical describes gyroscopes used in commercial satellites and requested that the Department add “specially designed for articles in this subchapter” to the control text. The Department does not accept this comment. As described above, the MT parenthetical is not control text. Items that meet the MT parenthetical but are not within the scope of the control are subject to the EAR and are very likely to be identified in an ECCN with an MT reason for control.

One commenter requested that jurisdiction of these items be determined based on the ensemble performance of a particular device model (a product line), and not based on the performance of an individual sensor. As noted above in a response to a similar comment to paragraph (d)(1), this is a question that involves many other parts of the USML and the Department will address it in a separate rulemaking.

Paragraph (e)(13), formerly paragraph (e)(12) in the 2nd proposed rule, is added for optical sensors that have a spectral filter that is specially designed for items controlled in USML Category XI(a)(4) and optical sensor assemblies that provide threat warning or tracking for those items controlled in USML Category XI(a)(4). One commenter requested that the Department move this control to paragraph XI(c) or add a note to paragraph (XI)(c)(4). The Department does not accept this comment. Many systems described in Category XII, as well as in Category XI, are subsystems of platforms and other defense articles. In general, cross-references are not added to the USML. As optical sensors are controlled in Category XII, when determining the jurisdiction of an optical sensor, an exporter must review Category XII, regardless of the kind of system that the optical sensor will be used in.

Paragraph (e)(14), formerly paragraph (e)(13) in the 2nd proposed rule, is added for IRFPA read-out integrated circuits (ROICs) specially designed

for defense articles. Two commenters stated that the proposed control would include ROICs for systems other than IRFPAs. The Department accepts this comment and adds “infrared focal plane array” to clarify the scope of the control.

Paragraph (e)(15), formerly paragraph (e)(14) in the 2nd proposed rule, is added for integrated dewar cooler assemblies (IDCA) specially designed for defense articles, with or without an infrared focal plane array, and any specially designed parts and components therefor.

One commenter stated that the phrase “other than Category XV” is not clear. The Department accepts this comment and removes the phrase. If an IDCA is specially designed for a spacecraft described in Category XV, it warrants ITAR control, except that space-qualified mechanical cryocoolers and active cold fingers are controlled in Category XV(e)(4).

One commenter requested that the Department revise the control to cover IDCAs specially designed for a military end use, rather than specially designed for a defense article, because they may be used for scientific and research purposes, such as in astronomical telescopes. The Department does not accept this comment. In general, astronomical telescopes are not described on the USML and are not subject to the ITAR. Therefore, an IDCA that is for an astronomical telescope is not likely to be specially

designed for a defense article. In the event that the use of the IDCA within an astronomical telescope is not sufficient to meet the release in paragraph (b)(3) of §120.41 and the use in the astronomical telescope is the only non-military use of that IDCA, then it would be specially designed for a defense article under §120.41.

Paragraph (e)(16), formerly paragraph (e)(15) in the 2nd proposed rule, is added for gimbals specially designed for defense articles in this category. The Department received no comments on this proposed control.

Paragraph (e)(17), formerly paragraph (e)(16) in the 2nd proposed rule, is added for IRFPA Joule-Thomson (JT) self-regulating cryostats specially designed for defense articles. The Department received no comments on this proposed control.

Paragraph (e)(18), formerly paragraph (e)(17) in the 2nd proposed rule, is added for infrared lenses, mirrors, beam splitters or combiners, filters, and treatments and coatings, specially designed for defense articles.

One commenter requested that the Department revise the control to be only for those items specially designed for a military end use, rather than specially designed for a defense article, because they may be used for scientific and research purposes, such as in infrared telescopes. The Department does not accept this comment. In general, scientific or research

telescopes are not described on the USML and are not subject to the ITAR. Therefore, an infrared lens or mirror that is for a scientific or research telescope is not likely to be specially designed for a defense article, particularly as the commenter states that the items are generally customized for the telescope.

One commenter requested that the Department add a note clarifying that the application of a coating, once applied and dried to an item, does not by itself change the jurisdiction of the item to which it was applied. The Department does not accept this comment. The Department adds a note to clarify that the treatments and coatings controlled in this paragraph are eligible to be analyzed under paragraph (b) of §120.41.

One commenter objected to infrared lenses being ITAR control based on being specially designed for a defense article, rather than by technical parameter. The Department does not accept this comment. Infrared lenses that are unique to a defense article warrant ITAR control.

Paragraph (e)(19), formerly paragraph (e)(18) in the 2nd proposed rule, is added for drive, control, signal, or image processing electronics specially designed for defense articles in this category.

One commenter requested that the Department revise the control to be only those items specially designed for a military end use, rather than

specially designed for a defense article, because they may be used with an ITAR controlled IRFPA for research. The Department does not accept this comment. In general, if an ITAR controlled IRFPA is being used, then the research involves a defense article. This is because the IRFPA is ITAR controlled if it is specially designed for a defense article. If the IRFPA is ITAR controlled, then any specially designed drive, control, signal, or image processing electronics for that IRFPA warrant ITAR control.

One commenter requested that the Department limit this control to drive, control, signal, or image processing electronics specially designed for optical sensors and not for the ITAR controlled accelerometers and gyroscopes. The Department does not accept this comment. ITAR control for such electronics is warranted when specially designed for one of the defense articles described in this category.

One commenter requested that the Department clarify whether populated circuit card assemblies (PCCAs) related to drive, control, signal, or image processing and specially designed for defense articles in Category XII should be controlled in this paragraph; or in Category XI(c)(2), in the paragraph for PCCAs with a layout specially designed for a defense article. The Department acknowledges that defense articles may be described in more than one paragraph on the USML. When determining the proper

classification within the USML, specifically described controls take precedence over general, catch-all controls. This control, for specially designed drive, control, signal, or image processing electronics, is more specific than the control in Category XI(c)(2), so these items would be controlled in Category XII.

Paragraph (e)(20), formerly paragraph (e)(19) in the 2nd proposed rule, is added for near-to-eye displays specially designed for defense articles in this category. The Department added a parenthetical “(e.g., micro-displays)” to clarify the scope of the control. The Department received no comments on this proposed control.

Paragraph (e)(21), formerly paragraph (e)(20) in the 2nd proposed rule, is added for resonators, receivers, transmitters, modulators, gain media, drive electronics, and frequency converters specially designed for defense articles in this category. The Department received no comments on this proposed control.

Paragraph (e)(22), formerly paragraph (e)(21) in the 2nd proposed rule, is added for two-dimensional infrared scene projector emitter arrays (i.e., resistive arrays) specially designed for infrared scene generators controlled in USML Category IX(a)(10). The Department received no comments on this proposed control.

Paragraph (e)(23), formerly paragraph (e)(22) in the 2nd proposed rule, is added for classified parts, components, accessories, attachments, and associated equipment. The Department received no comments on this proposed control.

Paragraph (e)(24), formerly paragraph (e)(23) in the 2nd proposed rule, is added for developmental IITs, FPAs, ROICs, accelerometers, gyroscopes, angular rate sensors, and inertial measurement units funded by the DoD. One commenter stated that the control needed further explanation to address projects partially funded by DoD. The Department does not accept this comment. Any amount of DoD funding for a developmental IIT, FPA, ROIC, accelerometer, gyroscope, angular rate sensor, and inertial measurement unit described in the control meets the DoD-funding threshold.

Paragraph (f) is revised to more clearly describe the technical data and defense services controlled in paragraph (f). No changes are made from the 2nd proposed rule. One commenter requested that the Department define the term “directly related.” The term directly related is used in every USML category, and therefore the comment is beyond the scope of this final rule. The Department will, however, address the issue in a separate rulemaking.

A new paragraph (x) has been added to USML Category XII, allowing ITAR licensing for commodities, software, and technology subject to the

EAR provided those commodities, software, and technology are to be used in or with defense articles controlled in USML Category XII *and* are described in the purchase documentation submitted with the application.

The proposed rules included certain definitions to assist commenters in responding to the proposed controls. They included “charge multiplication,” “focal plane array,” “image intensifier tube,” and “multispectral.” One commenter requested that the Department include these definitions within the regulatory text of the ITAR. The Department does not accept this comment. These definitions reflect the standard, generally applicable definitions of these terms, as used in both the Wassenaar Arrangement and the Export Administration Regulations. The Department provided these definitions in the proposed rules to assist commenters who may not have sufficient technical knowledge. The Department does not generally provide definitions within the ITAR, unless the definition intended by the Department is different from a dictionary or industry standard definition. As these definitions are the standard definitions of these terms, the Department is not including them within the text of the regulations.

Finally, articles common to the Missile Technology Control Regime (MTCR) Annex and the USML are to be identified on the USML with the parenthetical “(MT)” at the end of each section containing such articles. A

separate proposed rule will address the sections in the ITAR that include MTCR definitions.

REGULATORY ANALYSIS AND NOTICES

Administrative Procedure Act

The Department of State is of the opinion that controlling the import and export of defense articles and services is a foreign affairs function of the United States Government and that rules implementing this function are exempt from sections 553 (rulemaking) and 554 (adjudications) of the Administrative Procedure Act (APA). Although the Department is of the opinion that this rule is exempt from the rulemaking provisions of the APA, the Department has published two NPRMs as part of this rulemaking and has addressed the relevant public comments; this was done without prejudice to its determination that controlling the import and export of defense services is a foreign affairs function.

Regulatory Flexibility Act

Since this rule is exempt from the rulemaking provisions of 5 U.S.C. 553, it does not require analysis under the Regulatory Flexibility Act.

Unfunded Mandates Reform Act of 1995

This amendment does not involve a mandate that will result in the expenditure by State, local, and tribal governments, in the aggregate, or by

the private sector, of \$100 million or more in any year and it will not significantly or uniquely affect small governments. Therefore, no actions were deemed necessary under the provisions of the Unfunded Mandates Reform Act of 1995.

Small Business Regulatory Enforcement Fairness Act of 1996

This amendment has been found not to be a major rule within the meaning of the Small Business Regulatory Enforcement Fairness Act of 1996.

Executive Orders 12372 and 13132

This amendment will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 13132, it is determined that this amendment does not have sufficient federalism implications to require consultations or warrant the preparation of a federalism summary impact statement. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this amendment.

Executive Orders 12866 and 13563

Executive Orders 13563 and 12866 direct agencies to assess costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributed impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This rule has been designated a “significant regulatory action,” although not economically significant, under section 3(f) of Executive Order 12866. Accordingly, the rule has been reviewed by the Office of Management and Budget (OMB).

Executive Order 12988

The Department of State has reviewed the amendment in light of Executive Order 12988 to eliminate ambiguity, minimize litigation, establish clear legal standards, and reduce burden.

Executive Order 13175

The Department of State has determined that this rulemaking will not have tribal implications, will not impose substantial direct compliance costs on Indian tribal governments, and will not preempt tribal law. Accordingly, Executive Order 13175 does not apply to this rulemaking.

Paperwork Reduction Act

Following is a listing of approved Department of State information collections that will be affected by revision of the U.S. Munitions List (USML) and the Commerce Control List pursuant to the President's Export Control Reform (ECR) initiative. This final rule continues the implementation of ECR. The list of collections and the description of the manner in which they will be affected pertains to revision of the USML in its entirety, not only to the categories published in this rule.

The Department is not proposing or making changes to these collections in this rule. The information collections impacted by the ECR initiative are as follows:

- 1) Statement of Registration, DS-2032, OMB No. 1405-0002.
- 2) Application/License for Permanent Export of Unclassified Defense Articles and Related Unclassified Technical Data, DSP-5, OMB No. 1405-0003.
- 3) Application/License for Temporary Import of Unclassified Defense Articles, DSP-61, OMB No. 1405-0013.
- 4) Application/License for Temporary Export of Unclassified Defense Articles, DSP-73, OMB No. 1405-0023.
- 5) Application for Amendment to License for Export or Import of Classified or Unclassified Defense Articles and Related Technical Data, DSP-6, -62, -74, -119, OMB No. 1405-0092.
- 6) Request for Approval of Manufacturing License Agreements, Technical Assistance Agreements, and Other Agreements, DSP-5, OMB No. 1405-0093.
- 7) Maintenance of Records by Registrants, OMB No. 1405-0111.

List of Subjects in 22 CFR Part 121

Arms and munitions, Exports.

Accordingly, for the reasons set forth above, title 22, chapter I, subchapter M, part 121 is amended as follows:

PART 121 – THE UNITED STATES MUNITIONS LIST

1. The authority citation for part 121 continues to read as follows:

Authority: Secs. 2, 38, and 71, Pub. L. 90–629, 90 Stat. 744 (22 U.S.C. 2752, 2778, 2797); 22 U.S.C. 2651a; Pub. L. 105–261, 112 Stat. 1920; Section 1261, Pub. L. 112-239; E.O. 13637, 78 FR 16129.

2. Section 121.1 is amended by:

a. Removing and reserving paragraph (e) in U.S. Munitions List Category VIII;

b. Revising paragraphs (a)(3)(ii) and (a)(10) of U.S. Munitions List Category XI;

c. Revising U.S. Munitions List Category XII;

d. Removing and reserving paragraph (a) in U.S. Munitions List Category XIII; and

e. Removing and reserving paragraph (c) in U.S. Munitions List Category XV.

The revisions read as follows:

§121.1 The United States Munitions List.

* * * * *

Category XI — Military Electronics

(a) * * *

*(3) * * *

(ii) Synthetic Aperture Radar (SAR) incorporating image resolution less than (better than) 0.3 m, or incorporating Coherent Change Detection (CCD) with geo-registration accuracy less than (better than) 0.3 m, not including concealed object detection equipment operating in the frequency range from 30 GHz to 3,000 GHz and having a spatial resolution of 0.1 milliradians up to and including 1 milliradians at a standoff distance of 100 m;

* * * * *

(10) Electronic sensor systems or equipment for detection of concealed weapons, having a standoff detection range of greater than 45 m for personnel or detection of vehicle-carried weapons, not including concealed object detection equipment operating in the frequency range from 30 GHz to 3,000 GHz and having a spatial resolution of 0.1 milliradians up to and including 1 milliradians at a standoff distance of 100 m;

* * * * *

Category XII — Fire Control, Laser, Imaging, and Guidance

Equipment

(a) Fire control, aiming, detection, guidance, and tracking systems, as follows:

- *(1) Fire control systems;
- *(2) Electronic or optical weapon positioning, laying, or spotting systems;
- *(3) Laser spot trackers or laser spot detection, location, or imaging systems, with an operational wavelength shorter than 400 nm or longer than 710 nm and that are for laser target designators or coded target markers controlled in paragraph (b)(1);

NOTE TO PARAGRAPH (a)(3): For controls on LIDAR, see paragraph (b)(6) of this category.

- *(4) Bomb sights or bombing computers;
- *(5) Electro-optical systems that automatically detect and locate ordnance launch, blast, or fire;
- *(6) Electro-optical ordnance guidance systems;
- *(7) Missile or ordnance electro-optical tracking systems;
- *(8) Remote wind-sensing systems specially designed for ballistic-corrected aiming; or

(9) Helmet mounted display (HMD) systems or end items (e.g., Combat Vehicle Crew HMD, Mounted Warrior HMD, Integrated Helmet Assembly Subsystem, Drivers Head Tracked Vision System), other than such items controlled in Category VIII, that:

(i) Incorporate or interface (either via wired or wireless connection) with optical sights or slewing devices that aim, launch, track, or manage munitions; or

(ii) Control infrared imaging systems or end items described in paragraphs (a) through (d) of this category.

*(b) Laser systems and end items, as follows:

(1) Laser target designators or coded target markers, that mediate the delivery of ordnance to a target;

(2) Target illumination systems having a variable beam divergence and a laser output wavelength exceeding 710 nm, to artificially light an area to search, locate, or track a target;

(3) Laser rangefinders having any of the following:

(i) Output wavelength of 1064 nm and any Q-switched pulse output; or

(ii) Output wavelength exceeding 1064 nm and any of the following:

(A) Single or multiple shot(s) within one second ranging capability of 3 km or greater against a standard 2.3 m x 2.3 m NATO target having 10% reflectivity and 23 km atmospheric visibility; or

(B) Multiple shot ranging capability at 3 Hz or greater of 1 km or greater against a standard 2.3 m x 2.3 m NATO target having 10% reflectivity and 23 km atmospheric visibility;

(4) Targeting systems and target location systems, incorporating or specially designed to incorporate both of the following:

(i) A laser rangefinder; and

(ii) A defense article controlled in paragraph (d) of this category (MT if designed or modified for rockets, missiles, space launch vehicles (SLVs), drones, or unmanned aerial vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km);

(5) Systems specially designed to use laser energy with an output wavelength exceeding 710 nm for exploiting differential target-background retroreflectance in order to detect optical / electro-optical equipment (e.g., optical augmentation systems);

(6) Light detection and ranging (LIDAR), laser detection and ranging (LADAR), or range-gated systems, specially designed for a military end user

(MT if designed or modified for rockets, missiles, SLVs, drones, or unmanned aerial vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km); or

(7) Developmental lasers or laser systems funded by the Department of Defense via contract or other funding authorization.

NOTE 1 TO PARAGRAPH (b)(7): This paragraph does not control lasers or laser systems: (a) in production, (b) determined to be subject to the EAR via a Commodity Jurisdiction determination (see §120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

NOTE 2 TO PARAGRAPH (b)(7): Note 1 does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

NOTE 3 TO PARAGRAPH (b)(7): This provision is applicable to those contracts or other funding authorizations that are dated [INSERT DATE ONE YEAR FROM THE DATE OF PUBLICATION IN THE FEDERAL REGISTER] or later.

*(c) Imaging systems or end items, as follows:

(1) Binoculars, bioculars, monoculars, goggles, or head or helmet-mounted imaging systems (including video-based articles having a separate near-to-eye display), as follows:

- (i) Employing an autogated third generation image intensifier tube or a higher generation image intensifier tube;
- (ii) Fusing output of an image intensifier tube and an infrared focal plane array having a peak response wavelength greater than 1,000 nm; or
- (iii) Having an infrared focal plane array or infrared imaging camera, and specially designed for a military end user;

(2) Weapon sights (i.e., with a reticle) or aiming or imaging systems (e.g., clip-on), specially designed to mount to a weapon or to withstand weapon shock or recoil, with or without an integrated viewer or display, and also incorporating or specially designed to incorporate any of the following:

- (i) An infrared focal plane array having a peak response wavelength exceeding 1,000 nm;
- (ii) Second generation with luminous sensitivity greater than 350 $\mu\text{A}/\text{lm}$, third generation, or higher generation, image intensifier tubes;
- (iii) Ballistic computing electronics for adjusting the aim point display; or
- (iv) Infrared laser having a wavelength exceeding 710 nm;

(3) Electro-optical reconnaissance, surveillance, target detection, or target acquisition systems, specially designed for articles in this subchapter or specially designed for a military end user (MT if for determining bearings to specific electromagnetic sources (direction finding equipment) or terrain characteristics and designed or modified for rockets, missiles, SLVs, drones, or unmanned aerial vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km);

(4) Infrared search and track (IRST) systems having one of the following:

(i) Airborne or naval systems, that:

(A) Have range performance of 3 km or greater;

(B) Incorporate or are specially designed to incorporate an infrared focal plane array or imaging camera, having a peak response wavelength exceeding 3 microns or greater; and

(C) Maintain positional or angular state of a target through time; or

(ii) Specially designed for a military end user;

(5) Distributed aperture systems having a peak response wavelength exceeding 710 nm specially designed for articles in this subchapter or specially designed for a military end user;

(6) Infrared imaging systems, as follows:

(i) Mobile reconnaissance, scout, or surveillance systems providing real-time target recognition at ranges greater than 3 km (e.g., LRAS, CIV, HTI, SeeSpot, MMS);

NOTE TO PARAGRAPH (c)(6)(i): Target is defined as a NATO standard tank target having a frontal cross-section of 2.3 x 2.3 meters, and a side cross-section of 2.3 x 6.4 meters.

(ii) Airborne stabilized systems specially designed for military reconnaissance (e.g., DB-110, C-B4);

(iii) Multispectral imaging systems that provide automated classification or identification of military or intelligence targets or characteristics;

(iv) Automated missile detection or warning systems;

(v) Systems hardened to withstand electromagnetic pulse (EMP), directed energy, chemical, biological, or radiological threats;

(vi) Systems incorporating mechanism(s) to reduce the optical chain signature for optical augmentation;

(vii) Persistent surveillance systems with a ground sample distance (GSD) of 0.5 m or better (smaller) at 10,000 ft or higher above ground level and a simultaneous coverage area of 3 km² or greater;

(viii) Gimbaled infrared systems, as follows:

- (A) Having a stabilization better (less) than 30 microradians RMS and a turret with a ball diameter of 15 inches or greater; or
- (B) Specially designed for articles in this subchapter or specially designed for a military end user;
- (7) Terahertz imaging systems as follows:
 - (i) Concealed object detection systems operating in the frequency range from 30 GHz to 3000 GHz, and having a resolution less (better) than 0.1 milliradians at a standoff range of 100 m; or
 - (ii) Specially designed for a military end user;
- (8) Systems or equipment, incorporating an ultraviolet or infrared (IR) beacon or emitter, specially designed for Combat Identification;
- (9) Systems that project radiometrically calibrated scenes at a frame rate greater than 30 Hz directly into the entrance aperture of an electro-optical or infrared (EO/IR) sensor controlled in this subchapter within either the spectral band exceeding 10 nm but not exceeding 400 nm, or the spectral band exceeding 900 nm but not exceeding 30,000 nm;
- (10) Developmental electro-optical, infrared, or terahertz systems funded by the Department of Defense.

NOTE 1 TO PARAGRAPH (c)(10): This paragraph does not control electro-optical, infrared, or terahertz imaging systems: (a) in production, (b)

determined to be subject to the EAR via a Commodity Jurisdiction determination (see §120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

NOTE 2 TO PARAGRAPH (c)(10): Note 1 does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

NOTE 3 TO PARAGRAPH (c)(10): This provision is applicable to those contracts or other funding authorizations that are dated [INSERT DATE ONE YEAR FROM THE DATE OF PUBLICATION IN THE FEDERAL REGISTER] or later.

(d) Guidance and navigation systems or end items, as follows:

(1) Guidance or navigation systems (e.g., inertial navigation systems, inertial reference units, attitude and heading reference systems) having any of the following:

(i) A circular error probability at fifty percent (CEP50) of position error rate less (better) than 0.28 nautical miles per hour, without the use of positional aiding references;

- (ii) A heading error or true north determination of less (better) than 0.28 mrad secant (latitude) (0.016043 degrees secant (latitude)), without the use of positional aiding references;
- (iii) A CEP50 of position error rate less than 0.2 nautical miles in an 8 hour period, without the use of positional aiding references; or
- (iv) Meeting or exceeding specified performance at linear acceleration levels exceeding 25g (MT if designed or modified for rockets, missiles, SLVs, drones, or unmanned aerial vehicle systems capable of a range greater than or equal to 300 km or incorporating accelerometers specified in paragraph (e)(11) or gyroscopes or angular rate sensors specified in paragraph (e)(12) of this category that are designated MT);

NOTE 1 TO PARAGRAPH (d)(1): For rocket, SLV, or missile flight control and guidance systems (including guidance sets), see Category IV(h).

NOTE 2 TO PARAGRAPH (d)(1): Inertial measurement units are described in paragraph (e) of this category.

(2) Global Navigation Satellite System (GNSS) receiving equipment, as follows:

- (i) GNSS receiving equipment specially designed for military applications (MT if designed or modified for airborne applications and capable of providing navigation information at speeds in excess of 600 m/s);

(ii) Global Positioning System (GPS) receiving equipment specially designed for encryption or decryption (e.g., Y-Code, M-Code) of GPS precise positioning service (PPS) signals (MT if designed or modified for airborne applications);

(iii) GNSS receiving equipment specially designed for use with an antenna described in Category XI(c)(10) (MT if designed or modified for airborne applications); or

(iv) GNSS receiving equipment specially designed for use with rockets, missiles, SLVs, drones, or unmanned air vehicle systems capable of delivering at least a 500 kg payload to a range of at least 300 km (MT);

NOTE TO PARAGRAPH (d)(2)(iv): “Payload” is the total mass that can be carried or delivered by the specified rocket, missile, SLV, drone, or unmanned aerial vehicle that is not used to maintain flight. For definition of “range” as it pertains to rocket systems, see Note 1 to paragraph (a) of USML Category IV. For definition of “range” as it pertains to aircraft systems, see Note 2 to paragraph (a) of USML Category VIII.

(3) GNSS anti-jam systems specially designed for use with an antenna described in Category XI(c)(10);

(4) Mobile relative gravimeters having automatic motion compensation with an in-service accuracy of less (better) than 0.4 mGal (MT if designed or

modified for airborne or marine use and having a time to steady-state registration of two minutes or less);

(5) Mobile gravity gradiometers having an accuracy of less (better) than 10 Eotvos squared per radian per second for any component of the gravity gradient tensor, and having a spatial gravity wavelength resolution of 50 m or less (MT if designed or modified for airborne or marine use);

NOTE TO PARAGRAPH (d)(5): “Eotvos” is a unit of acceleration divided by distance that was used in conjunction with the older centimeter-gram-second system of units. The Eotvos is defined as 1/1,000,000,000 Galileo (Gal) per centimeter.

(6) Developmental guidance or navigation systems funded by the Department of Defense (MT if designed or modified for rockets, missiles, SLVs, drones, or unmanned aerial vehicle systems capable of a range equal to or greater than 300 km).

NOTE 1 TO PARAGRAPH (d)(6): This paragraph does not control guidance or navigation systems: (a) in production, (b) determined to be subject to the EAR via a Commodity Jurisdiction determination (see §120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

NOTE 2 TO PARAGRAPH (d)(6): Note 1 does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

NOTE 3 TO PARAGRAPH (d)(6): This provision is applicable to those contracts or other funding authorizations that are dated [INSERT DATE ONE YEAR FROM THE DATE OF PUBLICATION IN THE FEDERAL REGISTER] or later.

NOTE 4 TO PARAGRAPH (d)(6): For definition of “range” as it pertains to rocket systems, see Note 1 to paragraph (a) of USML Category IV. For definition of “range” as it pertains to aircraft systems, see Note 2 to paragraph (a) of USML Category VIII.

(e) Parts, components, accessories, or attachments, as follows:

- (1) Parts and components specially designed for articles described in paragraph (a)(1) or (a)(5) of this category;
- (2) Lasers specially designed for articles in this subchapter;
- (3) Laser stacked arrays specially designed for articles in this subchapter;
- (4) Night vision or infrared cameras (e.g., camera core) specially designed for articles in this subchapter;

NOTE TO PARAGRAPH (e)(4): The articles controlled by this paragraph have sufficient electronics to enable at a minimum the output of an analog or digital signal once power is applied.

(5) Infrared focal plane arrays specially designed for articles in this subchapter;

(6) Charge multiplication focal plane arrays exceeding 50 mA/W for any wavelength exceeding 760 nm and specially designed for articles described in this subchapter;

(7) Second generation and greater image intensifier tubes specially designed for articles in this subchapter, and specially designed parts and components therefor;

NOTE TO PARAGRAPH (e)(7): Second and third generation image intensifier tubes are defined as having a peak response within the 0.4 to 1.05 micron wavelength range and incorporating a microchannel plate for electron image amplification having a hole pitch (center-to-center spacing) of less than 25 microns and having either: (a) an S-20, S-25, or multialkali photo cathode; or (b) a GaAs, GaInAs, or other III-V compound semiconductor photocathode.

(8) Parts and components specially designed for articles described in paragraph (c)(3), (c)(4), (c)(5) or (c)(6)(vi)-(vii) of this category;

(9) Inertial measurement units specially designed for articles in this subchapter (MT for systems incorporating accelerometers specified in paragraph (e)(11) or gyroscopes or angular rate sensors specified in paragraph (e)(12) that are designated MT);

(10) GNSS security devices (e.g., Selective Availability Anti-Spoofing Modules (SAASM), Security Modules (SM), and Auxiliary Output Chips (AOC));

(11) Accelerometers having a bias repeatability of less (better) than 10 μg and a scale factor repeatability of less (better) than 10 parts per million, or capable of measuring greater than 100,000 g (MT);

NOTE 1 TO PARAGRAPH (e)(11): For weapon fuze accelerometers, see Category III(d) or IV(h).

NOTE 2 TO PARAGRAPH (e)(11): MT designation does not include accelerometers that are designed to measure vibration or shock.

(12) Gyroscopes or angular rate sensors as follows:

(i) Having an angle random walk of less (better) than 0.001 degrees per square root hour; or

(ii) Mechanical gyroscopes or rate sensors having a bias repeatability less (better) than 0.0015 degrees per hour (MT if having a rated drift stability of

less than 0.5 degrees (1 sigma or rms) per hour in a 1 g environment or specified to function at acceleration levels greater than 100 g);

NOTE TO PARAGRAPHS (e)(11) and (e)(12):

“Repeatability” is the closeness of agreement among repeated measurements of the same variable under the same operating conditions when changes in conditions or non-operating periods occur between measurements.

“Bias” is the accelerometer output when no acceleration is applied.

“Scale factor” is the ratio of change in output to a change in the input.

The measurements of “bias” and “scale factor” refer to one sigma standard deviation with respect to a fixed calibration over a period of one year.

“Drift Rate” is the component of gyro output that is functionally independent of input rotation and is expressed as an angular rate.

“Stability” is a measure of the ability of a specific mechanism or performance coefficient to remain invariant when continuously exposed to a fixed operating condition. (This definition does not refer to dynamic or servo stability.)

(13) Optical sensors having a spectral filter specially designed for systems or equipment controlled in USML Category XI(a)(4), or optical sensor assemblies that provide threat warning or tracking for systems or equipment controlled in Category XI(a)(4);

(14) Infrared focal plane array read-out integrated circuits (ROICs) specially designed for articles in this subchapter;

(15) Integrated dewar cooler assemblies specially designed for articles in this subchapter, with or without an infrared focal plane array, and specially designed parts and components therefor;;

(16) Gimbals specially designed for articles in this category;

(17) Infrared focal plane array Joule-Thomson (JT) self-regulating cryostats specially designed for articles controlled in this subchapter;

(18) Infrared lenses, mirrors, beam splitters or combiners, filters, and treatments and coatings, specially designed for articles controlled in this category;

NOTE TO PARAGRAPH (e)(18): For the purposes of this paragraph, treatments and coatings may be analyzed as a part, component, accessory, or attachment under paragraph (b) of §120.41 to determine if they are specially designed.

(19) Drive, control, signal, or image processing electronics, specially designed for articles controlled in this category;

(20) Near-to-eye displays (e.g., micro-displays) specially designed for articles controlled in this category;

(21) Resonators, receivers, transmitters, modulators, gain media, drive electronics, and frequency converters, specially designed for laser systems controlled in this category;

(22) Two-dimensional infrared scene projector emitter arrays (i.e., resistive arrays) specially designed for infrared scene generators controlled in USML Category IX(a)(10);

*(23) Any part, component, accessory, attachment, or associated equipment, that:

(i) Is classified;

(ii) Contains classified software;

(iii) Is manufactured using classified production data; or

(iv) Is being developed using classified information.

NOTE TO PARAGRAPH (e)(23): “Classified” means classified pursuant to Executive Order 13526, or predecessor order, and a security classification guide developed pursuant thereto or equivalent, or to the corresponding classification rules of another government.

(24) Developmental image intensifier tubes, focal plane arrays, read-out-integrated circuits, accelerometers, gyroscopes, angular rate sensors, and inertial measurement units funded by the Department of Defense (MT if

designed or modified for rockets, missiles, SLVs, drones, or unmanned aerial vehicle systems capable of a range equal to or greater than 300 km).

NOTE 1 TO PARAGRAPH (e)(24): This paragraph does not control items: (a) in production, (b) determined to be subject to the EAR via a Commodity Jurisdiction determination (see §120.4 of this subchapter), or (c) identified in the relevant Department of Defense contract or other funding authorization as being developed for both civil and military applications.

NOTE 2 TO PARAGRAPH (e)(24): Note 1 does not apply to defense articles enumerated on the U.S. Munitions List, whether in production or development.

NOTE 3 TO PARAGRAPH (e)(24): This provision is applicable to those contracts or other funding authorizations that are dated [INSERT DATE ONE YEAR FROM THE DATE OF PUBLICATION IN THE FEDERAL REGISTER] or later.

(f) Technical data (see §120.10) and defense services (see §120.9) directly related to the defense articles described in paragraphs (a) through (e) of this category and classified technical data directly related to items controlled in ECCNs 7A611, 7B611, and 7D611. (See §125.4 for exemptions.)

(MT for technical data and defense services related to articles designated as such.)

(g)-(w) [Reserved]

(x) Commodities, software, and technology subject to the EAR (see §120.42 of this subchapter) used in or with defense articles controlled in this category.

NOTE TO PARAGRAPH (x): Use of this paragraph is limited to license applications for defense articles controlled in this category where the purchase documentation includes commodities, software, or technology subject to the EAR (see § 123.1(b) of this subchapter).

NOTE TO CATEGORY XII: For purposes of paragraphs (b)(6), (c)(1)(iii), (c)(3), (c)(4)(ii), (c)(5), (c)(6)(viii)(b), and (c)(7)(ii) of this category, a “military end user” means the national armed services (army, navy, marine, air force, or coast guard), national guard, national police, government intelligence or reconnaissance organizations, or any person or entity whose actions or functions are intended to support military end uses. A system or end item is not specially designed for a military end user if the item was developed with knowledge that it is or would be for use by both military end users and non-military end users, or if the item was or is being developed with no knowledge of use by a particular end user. For the purpose of conducting a self-determination of jurisdiction, documents contemporaneous with the development must establish such knowledge. For the purpose of a

Commodity Jurisdiction determination, the government may base a determination on post-development information that evidences such knowledge or is otherwise consistent with §120.4 of this subchapter.

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